

MISSOURI. Conservationist

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[NOTE TO OUR READERS]

Not Just a Job

You've probably heard you should do what you love, and love what you do. If you work at something you're truly committed to and passionate about, your chances to succeed greatly increase.

Many Conservation Department employees chose their careers because of experiences from their past. They grew up with people who took them outdoors — floating, fishing, hunting, hiking or camping. They learned valuable lessons as children regarding identification of wildlife and plants, the importance of clean streams and those "secret" family morel mushroom spots.

This love for the outdoors often sparks the desire to develop and protect the resources, and to teach others to do the same. John Knudsen, private land conservationist in Gasconade and Maries counties, says, "My job offers the chance to help private landowners improve their fisheries, forestry and wildlife resources and habitat. It's very satisfying when a customer is happy with the results." His career, like that of many Department employees, means collaborating with others to manage our natural resources.

Urban foresters, such as Ann Koenig in Columbia, are some of those collaborators. "I started out pursuing a career in health care, but quickly realized I didn't want to be inside all day," Koenig says. "A career in forestry gives me a chance to work together with towns and communities to make a lasting difference for their trees and habitat."

Mary Litvan, fisheries management biologist in the Southwest region, grew up near the Springfield Nature Center but moved out of state to attend college. The quality and variety of Missouri's streams, rivers and lakes drew her back to work

for the Conservation Department. "Some of the greatest enjoyment in my job comes from working with landowners regarding aquatic issues such as stream bank stabilization or managing private ponds. It's very satisfying to see their satisfaction and appreciation when we work together to achieve long term solutions."

Work at the Conservation Department includes managing public lands for wildlife habitat and to improve hunting and fishing opportunities. "The hands-on biological work such as quail whistle surveys and banding doves provides my greatest satisfaction," says Brad Jump, wildlife management biologist in the Southwest region. "Seeing the positive results for plant diversity and animal habitat just a

few months after prescribed burns is also very rewarding. It's fulfilling to see how quail counts and wildlife sightings can improve in such a short time period."

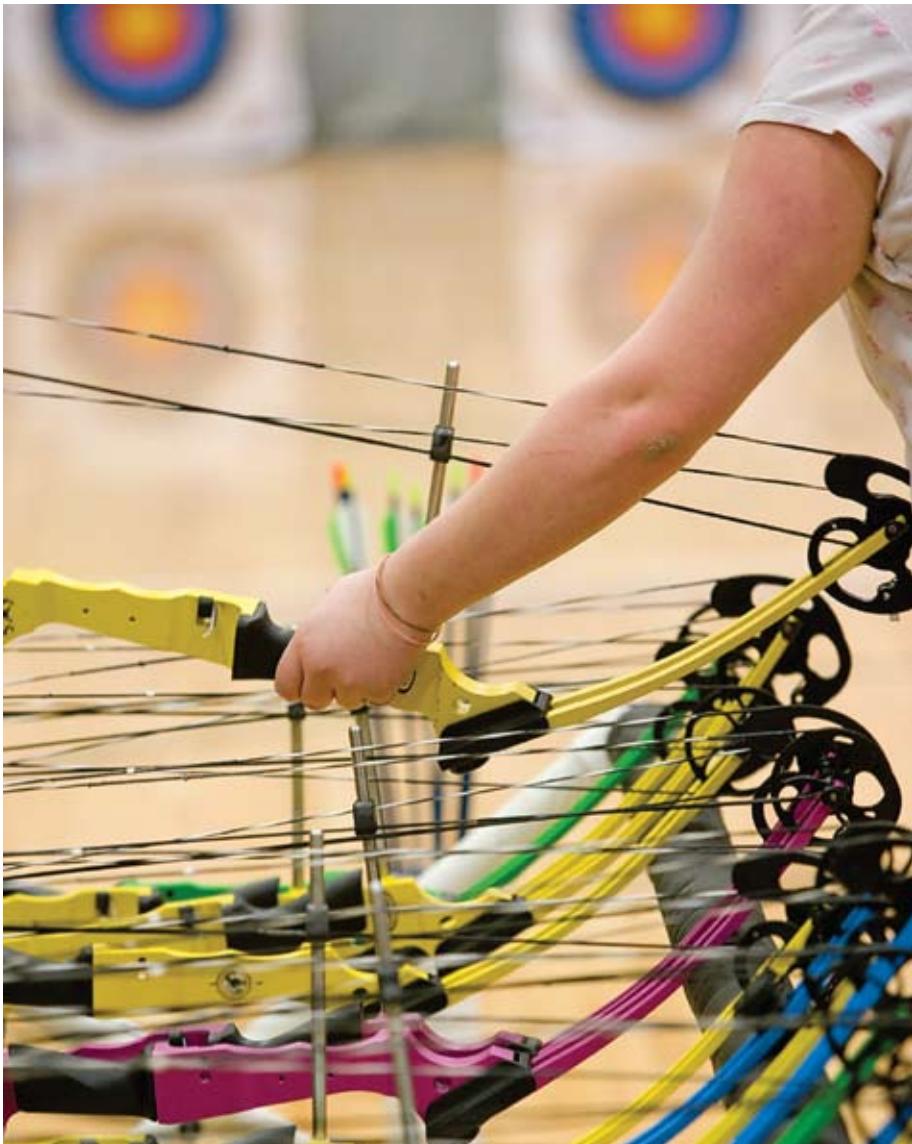
Missouri Department of Conservation employees take great pride in providing world-class customer service and education to citizens and visitors of the state. Contact your regional office for new ways and places to discover nature (see Page 3). I think you'll find the excitement and knowledge of Conservation Department employees to be quite contagious.

Debbie Strobel, human resources division chief
Tom Neubauer, human resources manager



Ann Koenig is an urban forester in Columbia.

OUR MISSION: *To protect and manage the fish, forest and wildlife resources of the state; to serve the public and facilitate their participation in resource management activities; and to provide opportunity for all citizens to use, enjoy and learn about fish, forest and wildlife resources.*



Cover: grey fox by Noppadol Paothong.

To learn more about photographing wildlife in your backyard read *Backyard Wildlife*, starting on Page 14.

Left: David Stoner captured this image of a competitor grabbing her bow in the first Missouri NASP tournament in Linn. Read more about the National Archery in the Schools Program, starting on Page 24.

NextGEN

This section reports on goals established in *The Next Generation of Conservation*. To read more about this plan, visit www.MissouriConservation.org/12843.

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GO DUTCH

What a great issue!
Exposing and unraveling the mysteries of the Dutch oven [June; *Dutch Oven Cooking 101*]! In six pages you brought to light the secrets so closely guarded by every Dutch oven "cook"

I have ever floated with in over 25 years! On the river, they are to a man a tight-lipped bunch that protects their process with a true passion (sometimes, I think, simply to make sure they get invited again next year if only for "that D.O. Blueberry Cobbler.")

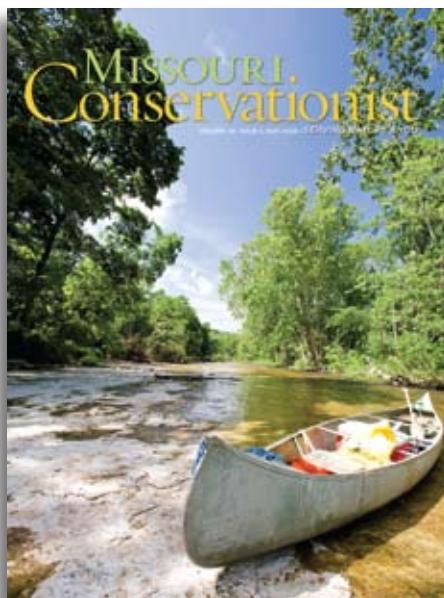
The *Oddball Fish* article was full of good stuff also, especially the tips on making the rope lures. I'll have to give that one a try.

Bob Osterholt via Internet

ODDBALL FISH

I enjoyed the article by Greg Stoner [*Angling for Oddball Fish*] in the June issue a whole lot, it was very informative. But there is one thing that puzzles me. Mr. Stoner said (Page 23–24) that blue cats have a mudline. Blue cats do not. They have white meat. Channel cats have a mudline. That's the only thing I have to complain about this article, it was well-written. Thank you for publishing a wonderful magazine.

Amanda Lambert via Internet



Author's note: You are correct that blue cats do not have a distinct "mudline" like a channel catfish, but they do have a layer of red meat under the skin that needs to be removed—unless you like your fish to taste very fishy. —Greg Stoner

MAY DAY ON THE FINLEY

Although it is very well-written and expresses many wonderful observations [May; Page 14], there is something important missing ... the fact that many property owners do not appreciate floaters pulling up on their banks anymore.

I hate that things have come to this, but as of about 10–20 years ago it started. Trash, beer cans, people leaving lit fires and piles of fish and crawfish remains, you name it. I've done my best to be polite to those I find pulling up on shore ... discussing be sure to enjoy themselves but please clean up and leave the place like it was—only to be met consistently with hostility, as if I was attempting to lord over the river.

Whenever it floods I clean up the garbage that washes down, use my tractor to clear the brush and drifts, rework the downed fencing, place old felled trees into banks if there is a newly washed-out spot so it won't erode into the field, and a myriad of other things any farmer does. I realize that 99 percent of people just wanting to enjoy a day floating down a river do not realize any of this. However, I really wish that a magazine such as yours would remind people that it's people like us that have to pick up after them when they mistreat the rivers, streams and creeks.

John McHaffie, Rogersville/Bruner

NEOTROPICAL NETWORK

Many thanks for publishing Kelly R. Gillespie's article on Neotropical Birds [*Going South*] in your April issue. That article not only pointed out the dangers these very special birds face but also tells how interested people can give these feathered creatures that we all enjoy a better chance. Your support of this great project will help this campaign a great deal, and we are certainly proud to have the Conservation Department and you on the team.

Anita B. Gorman, Commissioner Emeritus, Kansas City



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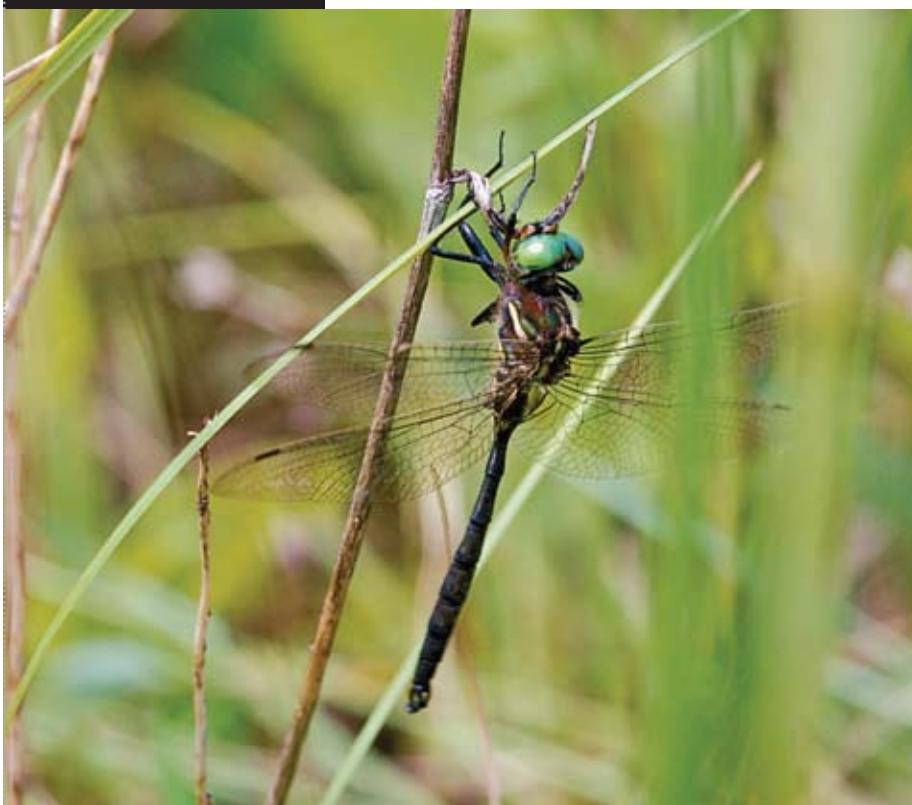
PASSION FOR THE OUTDOORS

Susie Wilson of Brighton took this photo of a passion flower while she and her husband were on one of their many walks at areas throughout the Ozarks. "I often take my camera along in order to capture just a bit of the beauty that surrounds us," says Wilson. "Such was the occasion when we spotted this wild passion flower. I just felt like it was too beautiful not to share." The unusual flower is a native in southern Missouri and blooms throughout the summer.



Species of Concern

Hine's Emerald Dragonfly



Species of Concern: Hine's emerald dragonfly

Scientific name: *Somatachlora hineana*

Distribution: Ozark marshes, fens and wet meadows

Classification: State and federal endangered

To learn more about endangered species: www.MissouriConservation.org/8227

THIS RARE INSECT was discovered in 1999 by Linden Trial, a Conservation Department biologist. She was looking for interesting insects at a natural area in Reynolds County. Her discovery dramatically increased the known range of the dragonfly, which previously had been documented in only three states: Wisconsin, Michigan and Illinois. Surveys for the species began in earnest following Linden's discovery. Today, Hine's emerald dragonfly is known from 30 locations and has been documented in 10 counties. In fact, Missouri can now boast to have the largest number of populations in the U.S. Loss of wetland habitat and impaired water quantity and quality are the most serious threats to this species' survival. Wetland drainage and modification destroys habitat by covering or damaging suitable living sites and by reducing the flow of water that creates the marshy habitat where dragonfly larvae grow to maturity. Destruction of wetland habitat, along with the improper use or disposal of pesticides, motor oil and other chemicals, also can impair water quality. Individuals can protect habitat for Hine's emerald dragonflies by fencing livestock out of marshy areas, keeping forage harvesting equipment away from wetland areas, and by leaving Ozark springs in a pristine condition. For more information, visit www.MissouriConservation.org/12097.

PHOTO: JIM RATHER; ART: MARK RATHEL

Birders Track Climate Change

This effort taps bird watchers for scientific data.

"**N**estWatch," a citizen-science project developed by the Cornell Lab of Ornithology and the Smithsonian Migratory Bird Center, is turning bird enthusiasts' observations of nesting behavior into data that could shed light on climate change. Participants watch bird nests and collect information about species, number of eggs and young birds and habitat. They report their findings online. The program has the potential to gather more data than scientists alone could ever hope to collect. For information, visit www.nestwatch.org.



No Bull!

This frog is voracious, loquacious and delicious.

Given three words to describe the bullfrog (*Lithobates catesbeianus*), you might say "larger than life." North America's largest frog, it will eat just about anything smaller than it. Male bullfrogs' lusty bass "jug-o-rum" mating call defines summer nights across most of Missouri. With a little help from human promoters who have transplanted it far outside its original range, the bullfrog has shouldered aside smaller, less aggressive native amphibians in some parts of the western United States. It isn't above eating the competition. Bullfrogs, in turn, are eaten by a variety of predators from snakes to humans, who hunt them at night with spears, pellet guns, fishing lures, bare hands and bright lights.





Black Gold

One place where fishing actually can pay

The Black River below Clearwater Lake has lots of spotted and largemouth bass, with 15-inch fish not uncommon. You also could catch a walleye worth cash. The Conservation Department has marked 248 walleyes with reward tags worth \$10 to \$100. Besides giving lucky anglers cash, reporting tagged fish helps biologists manage walleyes. Sportsman's Park, Hilliard and Hendrickson accesses all have boat ramps, as do Markham Springs Campground and Clearwater Dam. Canoe/kayak accesses include Hammer Conservation Area and Mill Springs Park. For more information, contact Paul Cieslewicz, 573-290-5730, paul.cieslewicz@mdc.mo.gov.



Blue catfish

Hawkeye River, Missouri Cats

What river borders Missouri's northeast corner?

The 26 miles or so of the Des Moines River upstream from its confluence with the Mississippi River are wide and muddy. Big blue, flathead and channel catfish swim up from the larger river to forage for food along the banks. Sturgeon hang out around the mouth. Two miles of river frontage at Frost Island Conservation Area enable anglers to reach those hungry fish. The Fort Pike Access, about a mile upriver from Frost Island, has a boat ramp. Bank fishing, trotlines, bank poles and limb lines are popular fishing methods here, with live chubs, bluegill

or bullheads for bait. Night crawlers and crawdads sometimes work, too. Fish the deep water along cutbanks at night for best results. Water levels are quite variable in the summer, so check the gauge height at waterdata.usgs.gov/ia/nwis/rt ahead of time. Boaters must watch for constantly shifting sandbars in the shallow river. Missouri anglers can fish the Iowa side of the river, but check for what is permitted in the *Wildlife Code* (available at permit vendors).

Trail Guide



Double-crested cormorant

BUSCH CA HAS ROOM TO ROAM



ST. LOUIS AREA residents never have to look far for a place to enjoy nature. Besides Powder Valley Conservation Nature Center and dozens of minimally developed conservation areas, river accesses and community lakes, this 6,987-acre area in St. Charles County has been a haven for nature-lovers since 1947. The trails are favorites of birders and nature photographers. The area's extensive road system allows visitors to drive or stroll between 32 fishable lakes and ponds, five wildlife viewing ponds and picnic areas. Visitors may be puzzled when they encounter dozens of concrete bunkers around the area. These are relics of munitions manufacturing on the area during WWII. The area office is open from 8 a.m. until 5 p.m. Monday through Friday.

Area name: August A. Busch Memorial CA

Trails: Busch Hiking & Biking, 3.2 mi.; Hamburg, 2 mi.; Fallen Oak, .7 mi.; Wildlife Management, .4 mi.; Dardenne Creek, .4 mi.; Pine, .2 mi.; Woodland, .2 mi.; Prairie, .2 mi.

Unique features: Self-guided nature trail and auto tour, lakes with rental boats, wildlife viewing blinds.

For more information: Call 636-441-4554 or visit www.MissouriConservation.org/2334



TAKING ACTION

World Bird Sanctuary—Linda Tossing



Organization: World Bird Sanctuary

Mission: To preserve the earth's biological diversity and to secure the future of threatened bird species in their natural environments.

Learn more or volunteer: Visit www.worldbirdsanctuary.org or call 636-225-4390 ext. 103

“**I**T'S HARD WORK, and you do scrape poop,” admits Linda Tossing, chuckling, “but I learn something new every time I go out.” As a volunteer at the World Bird Sanctuary for more than 11 years, Linda has been involved in field studies, animal management and program presentations. She especially enjoys taking raptors to community events and schools and supervising bird banding operations. She has helped expand the organization’s banding program from only one net at one location to six locations with 10 nets each and says she’s always thrilled and surprised that, “So many volunteers are willing to be up and at the sanctuary by quarter after 4 in the morning!”

Linda says that she gives her time because, “The sanctuary is really dedicated to its mission, and it does a great job getting the public involved with birds and conservation. You can do as much as you want to do, and you have great support from the staff — they’re very appreciative of volunteers. If you have a passion for birds and conservation, the sanctuary can really take you far.”

Pets and Nature Centers

Why you have to leave companion animals at home.

Parrots, pot bellied pigs, goats, rats on leashes—Tamie Yegge, Powder Valley Conservation Nature Center manager, has met all sorts of fun and unusual pets at her facility. Unfortunately, she’s had to turn them all away. Pets are not allowed at Powder Valley.

“It’s not that the Department is against pets,” says Yegge, who has a dog, a guinea pig, and a rat of her own, “it’s just that they can disrupt the flow of wildlife, and the primary mission of certain Conservation facilities is nature study.” Pets can harass or harm wildlife and destroy habitat. She adds that not everyone is comfortable sharing trails with pets, and noise and droppings can also be problems.

The *Wildlife Code* does allow for pets and hunting dogs at some conservation areas, but not at nature centers. To learn more about rules and regulations pertaining to conservation areas, consult the *Wildlife Code* and contact area managers directly.

“The laws are written for very specific reasons,” stresses Yegge. “Many of us have pets, too, and they’re wonderful. Unfortunately, they don’t always mix with wildlife, and they can be disruptive to some of our visitors’ nature experience.”





Bowfishing Basics

Archery anglers target big fish in shallow water.

Archery is a simple sport that evolved from stick-and-string technology. Bowfishing boasts the same simplicity, but you have to add a reel to store a longer string. Once a fish is arrowed, barbs hold onto the catch so you can retrieve it. Most bowfishing takes place in shallow water. Use a boat or creep along the shoreline to sight fish. Aim low, because fish are deeper in the water than they appear, and aim for the front of the fish to increase your chance of killing it.

Common target species include nongame species, such as grass and common carp; black, bigmouth and smallmouth buffalo; and longnose, shortnose and spotted gar.

Don't waste your harvest. All fish are edible, although some may taste better than others or have fewer bones to deal with. With a little searching on the Internet or at your local library, you can find methods of handling and cleaning almost any species, as well as a variety of recipes.

You might not be able to find a bowfishing partner on your block, but you can find plenty of them on the Internet. The Missouri Bow Hunters Association has a bowfishing Web site at www.mbhbowfishing.com. The site provides information about tournaments, articles related to bowfishing, and a forum through which you can communicate with other bowfishers about equipment, techniques and locations.



Missouri River Accesses

Scout it Out



Name: Missouri River accesses

Location: Boat or fishing access to the Missouri River throughout the state.

For more info: Online Conservation Atlas: www.MissouriConservation.org/2930

THE MISSOURI RIVER is almost too big to access. You'll find plenty of public land along the river that bisects the state, but steep, slippery, muddy or rocky banks, combined with strong current, often makes just reaching the river a dicey endeavor. The Missouri is full of fish, however, so reach it we must. Fortunately, river accesses make it easy to launch and land our boats and provide places for bank anglers to wet a line. River accesses often provide other amenities, including parking lots, paved ramps, docks, privies and a protected harbor from the current.

A *Discover Outdoor Missouri* map will help you locate nearby Missouri River accesses. They are free at many Conservation Department offices or by writing *Discover Outdoor Missouri*, PO Box 180, Jefferson City, MO 65102, or e-mail pubstaff@mdc.mo.gov. You might also search the online Conservation Atlas (Web address listed above) View maps where boaters and anglers can access the Missouri River at www.missouricanoe.org/river-maps/missouri.html, or call your regional office at the number listed on Page 3 for more information.



Bee, Wasp or Hornet?

Knowing the difference might help take the sting out of summer.

Missouri has hundreds of species of wasps and bees but only a few of them will deliver painful stings. Many wasps and bees are too small to hurt you; a good rule of thumb is that the larger the bee or wasp, the more painful the sting. Another rule of thumb is that solitary bees or wasps are not as much of a threat as those that nest in large groups.

Bees are usually thick bodied and hairy. The hairs make them better pollinators. They mostly feed at flowers, and their nests are made of wax cells. Bees typically sting only in self-defense. The honeybee's stinger is barbed and remains in the skin, which means the bee dies after stinging.

Wasps have a slender waist and are generally smooth. They build papery nests manufactured by mixing wood pulp and saliva. They often nest beneath eaves or under decks. Wasps are mostly predators of insects and other small animals, but some, especially yellowjackets, are attracted



Red wasp

to sweets. Yellowjackets are probably our most aggressive wasp, and they can sting repeatedly. The bald-faced hornet, which sometimes builds enormous hanging nests, is actually a wasp. Learn more about wasps and bees at www.MissouriConservation.org/8277.

NATIVE BEAUTY



Blazing star

PHOTOS: JIM RATHER

Blazing Stars

FOLLOWING THE FLURRY of spring, there's a tendency to put away your field guides and forego wildflower watching until next year. However, this means you've denied yourself the opportunity to key out Missouri's four most common blazing stars, all of which have spiky flowers surrounded by bracts and which bloom in summer.

The shape of the bracts is your best clue to identification. *Liatis aspera* has rounded bracts surrounding uniformly distributed flower heads, each containing from 16–36 florets. *Liatis pycnostachia* bracts are recurved and come to a sharp point. They overlap flowers that are clumped at the top of the plant. *Liatis squarrosa* has long, pointed bracts that overlap flower heads containing up to 100 florets. *Liatis cylindracea* has rounded bracts with short points at the end. The plants have few flower heads.

Look for blazing stars in open woods, fields and glades. They are especially easy to spot along roadsides and railroad lines, where they sometimes grow in large clumps and produce plants more than 5 feet tall. They are largely absent from the Bootheel. These perennials do not spread aggressively, but they live a long time, allowing them to survive in disturbed areas. Because they offer summer beauty, people often choose them for landscaping. For native plant landscaping ideas, go to www.grownative.org/landscape/.



Don't Flush Meds

Prescription drugs are serious pollutants.

Lushing old or unneeded prescription drugs is a bad idea unless the label says to do so. Most municipal water treatment plants are not equipped to remove medications, which can harm wildlife and end up in drinking water. Instead, remove medications from their original containers and mix them with an undesirable substance, such as cat litter or used coffee grounds. Put this mixture into a disposable container with a lid, such as an empty margarine tub, or seal it in bag and put it in the trash. For more information, visit www.smarxtdisposal.net.



Tips for a Healthy Pond

What grows around ponds is as critical as what's in them.

If you are planning to build a pond, be sure to include landscaping in your plans. Before construction, get your soil tested so you know how much lime and fertilizer you need. Immediately after construction, lime and fertilize any bare soil, then plant cover crops to prevent soil from washing into the pond. The pond basin should be planted with oats, Sudan grass, rye or wheat, depending on season. In the area around the basin, plant grass and cover with straw or other mulch. Native, warm-season grasses require less maintenance than introduced, cool-season grasses, such as fescue. Windbreaks of

cottonwood and cedar trees planted along the south and west shorelines reduce wave action that can erode banks and cause muddy water. A wealth of detailed information about pond construction and management is available in the 64-page *Missouri Pond Handbook*. You can access this publication at www.MissouriConservation.org/22.

Stream Team



Jeff Barrow Team



JEFF BARROW THINKS globally and acts locally. He looked at an eroding creek bank on his family's farm near New Bloomfield and decided that was a good place to start saving Missouri streams. He and his family

stabilized the eroding bank with a cedar tree revetment. Working with other Stream Team associations put him in touch with Chad Pregracke, founder of Living Lands and Waters. Barrow was so impressed with the nonprofit environmental group's work cleaning up the Mississippi and Missouri rivers that he coauthored *From the Bottom Up: One Man's Crusade to Clean America's Rivers*, with Pregracke. In February, Barrow became director of Missouri River Relief, but he still finds time to work on his family farm, where he wants to create profitable pastures with native grasses and broadleaf plants.

Stream Team Number: 738

Date formed: February 7, 1996

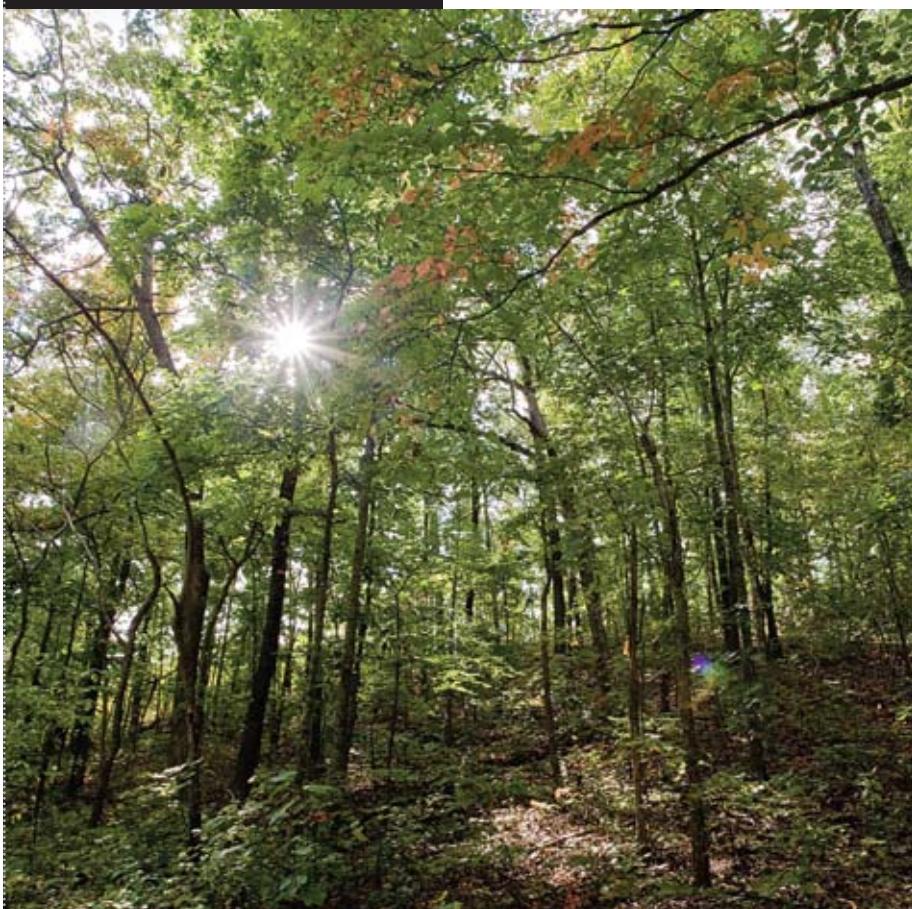
Location: Hiller's Creek, Callaway County

For more info about Stream Teams: www.mostreamteam.org



Our Glorious Forests

CLEARWATER CA



Size: 11,434 acres

Location: From Highway 34 east of Garwood in Reynolds County, take the Route HH spur

Highlights: Interesting natural features include two fens (a type of wetland), a rhyolite (a type of volcanic rock resembling granite) knob.

Find more info: www.MissouriConservation.org/a4905



THE FORESTS OF Clearwater Conservation Area shelter some of Missouri's rarest plants. For example, glossy leaved aster is a northern species whose distribution shifted southward as Ice Age glaciers advanced. When the glaciers retreated, the aster remained in Missouri only as isolated populations in fens, which provide a relatively cool microclimate. A deep muck fen natural community lies between a north-facing slope and a small, intermittent stream in Deckard Hollow. This fen is home to a total of 33 different plant species.

Other natural communities of the conservation area include dry-mesic chert and dry-mesic limestone/dolomite forests, a second fen, a sinkhole pond and a dry sink. During your visit to the area, you'll notice forest management practices designed to improve tree growth, tree quality, diversity and species composition. These practices also enhance wildlife habitat, help maintain watershed quality and sustain forest health.

Maximize Your Timber Sale

Conserve resources, reduce taxes, and maintain profits

Selling timber? Begin by hiring a professional forester to inventory your woods. This step advances management goals, and establishes the timber basis, which can lower the income tax on sale profits. Next, choose the right trees to cut. "High-grading" trees will pay the most now, but it will lower the value of future sales. Advertise the sale widely and get sealed bids, then hire a trained logger with good references. Best harvest practices safeguard forest health and ensure long-term profitability.



Unwanted Guests

Don't bring home gypsy moths from your vacation!

Since the 1800s, the oak-leaf-eating gypsy moth has spread from New England as far west as Wisconsin, northeastern Illinois and Indiana. If you travel through these states this summer, take care that you don't return with unwanted stowaways. Gypsy moths have not established in Missouri yet, but when and where they do, they're expected to severely damage our oak forests. To hold the line against this destructive pest, inspect your gear, including your vehicle and camper, before returning home. If your inspection turns up fuzzy, light-brown egg masses or dark-brown pupae, destroy them while you're still in the infested state.



If you find evidence of gypsy moths in Missouri, notify the departments of Agriculture (573-751-5505) or Conservation (573-751-4115). Visit www.MissouriConservation.org/7282 for more information.



Fire Rx

Burning stimulates native grasses and wildflowers.

Featuring native grasses and wildflowers on dry, rocky soil, Missouri's glades support a variety of birds and wildlife.

Burning your glade this fall will stimulate native wildflowers and grasses, which will appear next spring.



Begin by clearing firebreaks 3- to 12-feet-wide around the perimeter of your glade. Establish firebreaks at least 100 feet from dead cedar piles or snags. A burn plan is highly recommended, and MDC offers prescribed burn workshops for landowners. Contact the regional office near you (see Page 3).

It Pays to Restore Wetlands

Program helps landowners bear restoration costs.

Get benefits for restoring or creating wetlands. Through the federal Conservation Reserve Program's Practice 23, qualified producers are eligible for the following: annual rental payments for a period of 10–15 years (typically \$85–\$125 per acre); cost share to establish the practice (90 percent of the state average cost); sign up incentive payment (SIP) of \$100 per acre; average annual rental payments plus SIP after 15 years equals \$1,600 per acre. Rental rates are based upon the soil rental rates of the soils included in your CRP offer. If you have acreage that is susceptible to flooding, this program may be a very good option. Applications are taken on a continuous basis. Please contact your local Farm Service Agency office to see if your land is eligible.



Glade Restoration

On the Ground



Mike Wolk, Sainte Genevieve County landowner, on his glade restoration

“**G**LADE RESTORATION IS a great practice for anyone who appreciates wildlife,” says Sainte Genevieve County landowner Mike Wolk. He started restoring the glades on his 200-acre farm about five years ago. He began by working with private land conservationist Jan Dellamano to develop a management plan, which emphasized removing invasive trees and brush. Now Mike is seeing more native grasses and wildlife. “The turkeys like the openings we’ve created, and I’ve seen quail in areas where I’ve never seen them before.” Mike’s farm lies in the Hickory Canyon Conservation Opportunity Area, so his efforts contribute to the whole region’s conservation goals. He plans to continue glade work this spring with a prescribed burn. He recommends other landowners in his neighborhood pursue glade restoration cost-share opportunities, too. “Anything we can do to increase wildlife benefits us all.” Call your regional office for more information about restoring glades on your land.



“Survivorman-Style” Camp

Hone your wilderness skills at this Ozark weekend program.

No food, no shelter, no fresh water, no tools. Can you survive in the Ozark wilderness for one weekend? Find out at the Twin Pines Conservation Education Center’s “Ozark Survivorman” weekend camp July 24–26. Open to the first 15 registrants age 13 and older, the program will start with classroom orientation Friday afternoon and Saturday morning. Classroom sessions will cover survival techniques such as finding food and water, building shelter, coping with animal and health dangers, using map and compass, etc. After Saturday’s noon lunch break, participants will pack up their gear and get “lost” in the Ozarks wilderness to practice their newly acquired skills overnight. If you don’t feel comfortable relying only on your new survival skills, you can resort to supplies provided. The program is free, and includes all gear, food and water. To register, please call 573-325-1381.



NATURE ACTIVITY



NATURE ACTIVITY: DAVID STONNER; FIRE: CLIFF WHITE

Discover Nature — Families



REMEMBER WHEN YOU were a kid, how the outdoors seemed mysterious, even a little scary? Maybe your mom, dad or special adult helped you explore nature, learn the names of plants and animals, bait a hook or handle a gun safely. If you’d like to be that kind of mentor to the kids in your life, “Camp Nature” at Twin Pines Conservation Education Center is for you. As an MDC Discover Nature—Families program, “Camp Nature” is designed to help adults and children explore nature and master outdoor skills together. The two-day program features outdoor skills such as archery, fishing, air-rifle shooting, outdoor photography, wild edibles, survival skills and basic wilderness first aid. The program is free, and you don’t need to bring food or gear, but reservations are required (see phone number below).

Where: Twin Pines Conservation Education Center in Winona

When: July 30–31, 9 a.m. to 4 p.m. each day

Who should come? Kids accompanied by their favorite adult(s)

Reservations are required: Call 573-325-1381

Teacher Workshops

Provide enrichment with a conservation focus

Enrich your teaching and earn professional development contact hours at our “Back to School Bash.”

Educator workshops in three beautiful locations will show you how to match conservation activities with any grade-level expectation. Twin Pines Conservation Education Center in Shannon County holds its Bash July 29, from 9 a.m. to 3 p.m. Call 573-325-1381 by July 25 to register. Bray Conservation Area in Phelps County has its Bash July 29, from 9 a.m. to 3 p.m. Call 573-368-2590, ext. 29. The Ozark Regional Office Bash is July 31, from 9 a.m. to 3 p.m. Call 417-256-7161, ext. 303, to register.

Backyard Wildlife

by NOPPADOL PAOTHONG





► GREY FOX

A grey fox surveyed my backyard momentarily in the early spring morning. Due to their secretive nature, it is not easy to capture grey foxes in close range, even with a long telephoto lens. When feeling threatened or suspicious, these house-cat-size animals can quickly disappear into the woods or up to a nearby tree. Considering all these characteristics, it was a very rare and exciting moment.

📷 500mm telephoto lens • f/4.0 • 1/400 sec

Early in the morning, as the sun started to rise, I dressed in camouflage clothing and sat next to a tree, waiting in anticipation. An hour passed without success. I decided to play a trick I'd learned while photographing coyotes out west. I played the sound of a rabbit in distress. All of a sudden, I caught a glimpse of a small mammal peeking through the thick cedar trees and bushes.

It was a handsome grey fox, standing no more than 25 feet away. It was one of the most beautiful foxes I had seen in years. My senses told me that it had probably been watching me for some time.

I snapped a few frames with my camera. The sound of the shutter startled the fox, but it must have decided that I wasn't a threat. I couldn't believe how close he approached as he tried to make me out and locate the sound (I was more like a bush than a human at that point). Several times he even barked at me while circling.

The whole scene lasted less than 20 minutes, but it felt a lot longer. The experience was especially terrific because it happened in my own backyard!

Most people picture a wildlife photographer as someone who tracks and stalks wildlife in distant and remote areas, hoping to get a once-in-a-lifetime shot. That is often true. I do spend numerous hours searching for wildlife in a variety of places. Yet, as much as I enjoy traveling to remote areas to document wildlife, I also have discovered that many opportunities exist in the very near vicinity, such as parks, nearby ponds or my backyard. One summer, I discovered a field of native prairie flowers not too far from my house. I spent many mornings photographing seasonal flowers and insects, such as dragonflies and beetles.

If you look around, you might find photographic opportunities close at hand.

Those who have a garden can observe various species of butterflies, insects and songbirds. Wild turkeys or deer can easily be observed in the parks or in your backyard. Because there is usually no hunting in these areas, and the animals are more accustomed to humans, your subjects may be less wary of your presence. They seem to be more relaxed, which gives you a better chance to capture good images.

The fox has since long gone, but the drama of that spring morning still replays in my head. In fact, some of my very best wildlife photographs are taken in my own backyard. The opportunity to observe wild animals is always an exciting experience, and to have a chance to photograph them in your backyard can be even more rewarding.

So next time you're relaxing in your backyard, carry your camera and pay close attention to your surroundings, because you never know what kind of photographic opportunities you'll discover. ▲





▲ GREY SQUIRREL

While waiting inside a photo blind to photograph a coyote, I heard a noise and discovered that a grey squirrel was foraging for food right in front of my blind. Whether it's a close-up image or a shot with their environment, getting the subject's eyes in focus is crucial in making good images.

⌚ 500mm telephoto lens • f/4.0 • 1/80 sec

◀ CEDAR WAXWING

Cedar waxwings are regular visitors to Missouri during the spring migration. I discovered a flock of them near my office in late March. It is usually easier to approach and photograph birds when they are feeding, as long as you pay attention to their body language and make slow movements.

⌚ 500mm telephoto lens • f/8.0 • 1/160 sec

RACCOON ▶

One morning while driving to my office, I caught a glimpse of a small creature at the edge of a parking lot. It was a young raccoon. I scrambled for my camera and set up a tripod as quickly as I could. By the time I was set up, two young raccoons were up in a tree. Having my camera ready enabled me to capture a few shots before they disappeared into the woods.

📷 500mm telephoto lens • f/4.0 • 1/60 sec



▼ CAROLINA MANTIS

One of my favorite things to do in summer evenings is to search for good insect images at a nearby nature center. One evening, I found this Carolina mantis catching a bumblebee. A macro lens that magnifies often plays a crucial role in photographing small subjects.

📷 100mm lens • f/2.8 • 1/200 sec



AMERICAN ROBIN ▶

Mid-summer I discovered a robin's nest in my backyard tree. Both parent birds continued to feed the chicks throughout the day, which gave me many opportunities to capture this image. A long telephoto lens is a must to photograph nesting birds without causing much stress.

📷 500mm telephoto lens • f/5.7 • 1/250 sec





◀ TUFTED TITMOUSE

Springtime offers great opportunities to observe and photograph songbirds in your own backyard. This male tufted titmouse was a regular visitor to my backyard bird feeder. I set up a photo blind near the feeder and waited for the bird to perch in the good position.

⌚ 500mm telephoto lens • f/8.0 • 1/500 sec



BLUE BELL DRAGONFLY ►

A field filled with wildflowers often attracts a variety of insects such as this blue bell dragonfly. I captured this dragonfly while its wings were still covered with dew. I carefully looked for a darker background to make the subject stand out. Using a flashlight above the subject is one trick I use to bring out details, such as the dragonfly's wings with water dew.

⌚ 180mm lens • f/3.5 • 1/13 sec





◀ SALT MARSH CATERPILLAR

A caterpillar is a slow moving subject, which makes it easier to photograph with a macro lens. When photographing small-size animals, shooting at their eye level often creates good images. Another tip for photographing subjects with lighter color is to find the darker background to make the subject stand out.

⌚ 180mm lens • f/3.6 • 1/80 sec



▲ EASTERN TIGER SWALLOWTAIL

With their graceful flying and beautiful wings, butterflies make an interesting subject to photograph. This swallowtail was sipping nectar from a flower in the evening. When photographing butterflies, look for colorful surroundings to add more elements.

⌚ 180mm lens • f/5.0 • 1/800 sec

◀ COTTONTAIL RABBIT

Early morning and evening are the time when wildlife are most active. Early morning at a nearby park, I spotted this cottontail rabbit feeding along the road.

⌚ 500mm telephoto lens • f/5.7 • 1/100 sec





Finding **AIM**

National Archery in the Schools Program
teaches students how to shoot for success.

story by KEVIN LOHRAFF, photos by DAVID STONNER



They say it's hard to get kids to focus on anything these days besides TV and video games. Yet there they were, a whole string of school kids, stretched out nearly 200 feet, all standing at the shooting line and staring at the targets in front of them.

One hundred and forty eyes were boring holes in the bull's-eyes, willing the arrows they were about to launch to follow the same path as their penetrating gaze. The young archers were motionless, waiting for the command to shoot, and it was intensely quiet. I think I heard a stomach growl from the kid at the end of the line.

The students were competing at the Missouri National Archery in the Schools Program's first state tournament, held on March 7 at Linn State Technical College. Dave Murphy, executive director of the Conservation Federation of Missouri, stared at the impressive line of kids and shook his head. "This is unbelievable," he said with a huge grin on his face.

The Conservation Federation partners with the Department of Conservation to help NASP grow in Missouri. The first state tournament, where 274 kids came from 17 schools to compete, is a happy page in Missouri NASP's scrapbook.

NASP is international-style target archery taught in grades 4-12 as a part of in-school curriculum. NASP is usually taught in physical edu-

cation classes, but is sometimes a part of math, science, physics, conservation and lifetime sports classes, as well. NASP focuses on safety and beginning instruction, and it requires certified teachers and standard equipment. It also requires positive language and instruction. In their training, teachers learn to properly set up and operate an archery range so they can maintain NASP's impeccable safety record. The National Safety Council ranks archery as safer than any ball sport taught in any school in North America except for table tennis.

NASP began in 2002 in Kentucky as a partnership between the departments of education and fish, game and wildlife. PE teachers were trained, and the program was piloted in 21 schools. NASP's founders knew they were onto something big when, a year later, the number of NASP schools in Kentucky had grown to 120, and educators from 30 states had called asking how they could get archery started in their schools.

Today, NASP is being taught in more than 5,000 schools in 46 states and five countries. Since NASP began, 4.6 million kids have participated — more than 1 million kids will participate this year alone.

Last year, the number of NASP schools in Missouri doubled. Today, 76 Missouri schools are teaching NASP to more than 12,000 kids.

One reason for NASP's success is that, unlike most other sports taught in schools, nearly any student can be successful with archery. "You don't have to be athletic, fast, big or strong to be good at archery," says NASP's president and co-founder, Roy Grimes. Students of all sizes and abilities learn archery together, and at competitions, boys and girls are at the shooting line together.

NASP IMPROVES KIDS' LIVES AT SCHOOL

Teachers and school administrators have discovered that archery class can be a great motivator for students. Greg Byrne, a teacher at Flynn Park Elementary School in University City, has noticed that at least 50 percent of his students are participating more in class since he started teaching NASP. Some schools require students to maintain good grades in order to participate in archery. Teachers also report that NASP re-

How to get NASP started at your school

1. The Missouri Department of Conservation certifies teachers with the required NASP Basic Archery Instructor training at no cost to the teacher. The hands-on training takes eight hours. Contact your local MDC Outdoor Skills Specialist to schedule your Basic Archery Instructor training. A listing of all MDC Outdoor Skills Specialist can be found at www.MissouriConservation.org/8820.
2. The next step is to buy archery equipment, which must be official NASP equipment. A full set of equipment costs around \$3000, though you can get the program started with less than a full set. A \$500 grant for equipment, offered by MDC and the Conservation Federation of Missouri is available to schools starting NASP.

For more information, including a video clip of the first Missouri NASP state tournament, visit www.MissouriConservation.org/16066 or go to www.nasparchery.com.



duces student behavior problems and improves class attendance.

"It's incredible!" says Steve Lanier, a PE and NASP teacher at Longview Farm Elementary in Lee's Summit. "Parents have told me their kid wants to come to school when they're sick just so they can shoot archery."

When Tracy Flood heard about NASP, she knew it would be a good fit for her outdoor education class. Tracy, a teacher at Crane Middle School, has a waiting list of kids who want to take her class. "Archery is the most popular class in middle school. Once they're hooked, they're hooked. Kids want to shoot, so they make sure they keep their grades up."

Karla Snook, principal at Crane Middle School, says it is easy to see the benefits NASP has brought to her school. "NASP has allowed a new special bond between the kids that teachers and parents have noticed. It's also improved parent involvement with the school. Just last night,



Competitors in the first Missouri National Archery in the Schools Program tournament in Linn. The first state tournament in March brought 247 kids from 17 schools.

members of the school board asked me how we could get NASP started in the high school."

Twins Shelby and Karley Andrus are both in Tracy's class. "Archery is just so different from my other classes," says Shelby. "I just put everything else out of my head and focus on where I want the arrow to go."

**Parents of
NASP kids are
discovering
that archery is
something they
can share with
their children.
Twins Karley (far
right) and Shelley
Andrus set up
straw bales and
shoot in their
yard with the
whole family.**

NASP IMPROVES KIDS' LIVES AT HOME

Shelby and Karley liked archery in Tracy's class so much that they asked for their own bows for Christmas. The twins' mom, Shelley, says the girls' dad, Duane, and older brother, Holden, have picked up archery again since the girls learned archery in school. They set up straw bales and shoot in the yard. Now, they sometimes all shoot together.

"It's something they suddenly have in common with other family members, including their uncles and grandpa who bowhunt," says Shelley. "A lot of conversations have started about archery shooting and picking out their first bow because now the girls can relate."

Research reveals that 26 percent of NASP kids that have been in the program for a year or more buy (or convince someone else to buy for them) their own archery equipment. Parents are often happy to support a physical activity that provides a healthy alternative to spending too much time indoors with the TV, computer and video games. Parents are also discovering that archery is an activity they can share with

their kids. Sometimes parents buy themselves a bow and learn the new skill alongside their child, or, like the twins' dad, become inspired by their kids to get re-acquainted with archery.

Once kids get their own bow, the opportunities to practice and improve are endless. The twins practiced every night until dark the week before the state tournament.

NASP IMPROVES KIDS' LIVES IN THE COMMUNITY

In addition to teaching NASP during regular school hours, more than a third of NASP schools have started after-school archery programs. While in-school NASP uses only a single type of bow, arrow and target in order to put the focus on the kids themselves instead of the equipment, after-school archery programs can introduce kids to a variety of equipment and shooting styles. Kids in after-school programs can shoot recurve bows, compound bows or longbows, and can use different types of targets, such as 3-D animal targets. In addition to having more chances to practice and enjoy the social benefits of shooting with other classmates, kids in after-school



archery programs also benefit from the support and coaching of other teachers, parents and volunteers from the community.

Communities are seeing NASP as a great investment in their future. Local sporting clubs, conservation groups and civic organizations often donate archery equipment to schools, volunteer to help support after-school archery clubs and organize local competitions and 3-D shoots. In Missouri, the National Wild Turkey Federation, Whitetails Unlimited, Pheasants Forever, Quality Deer Management Association, and the Friends of NRA are just a few of the groups which have donated equipment or funds to NASP schools. Retailers are beginning to carry official NASP equipment, and Bass Pro Shops started a NASP grant program for Missouri schools. Archery shop owners often give NASP kids discounts for shooting at their range. More and more cities are building community archery parks and ranges, which provide additional shooting opportunities for NASP kids and their friends and families.

NASP PROVIDES UNLIMITED OPPORTUNITIES TO SUCCEED

Addressing the hundreds of students, teachers and parents at Missouri NASP's first state tournament, Conservation Commissioner Don Johnson, who was instrumental in bringing NASP to Missouri, opened the awards ceremony with these words: "You are all a dream of mine" Moments later, screams of excitement and tears of joy flowed when kids were awarded medals, trophies and scholarships. The top boy and girl shooter each won a new chrome-finish bow. The Missouri Conservation Heritage Foundation provided a grant for \$5,000 to help winning teams pay for their trip to Kentucky to compete at the NASP national tournament in May. As the winning archers filed up to the awards platform, Commissioner Johnson personally handed each medal and trophy to the students.

While competition can motivate some kids to a higher level of achievement, it is not the goal of the program or even its best measure of success. NASP is successful when it helps kids stay in school and get better grades, when kids share archery at home with their friends and family, and when they benefit from one-on-one coaching and attention from a caring adult.

A National Winner



Jordan Lewis (left) and her coach, John Ponzar. Jordan won second place in the Elementary Girls Fifth Grade Division and third place in the overall Elementary Girls Division (score of 279). Her team won 22nd in the Elementary Division. Jordan attends George Guffey Elementary in Fenton.

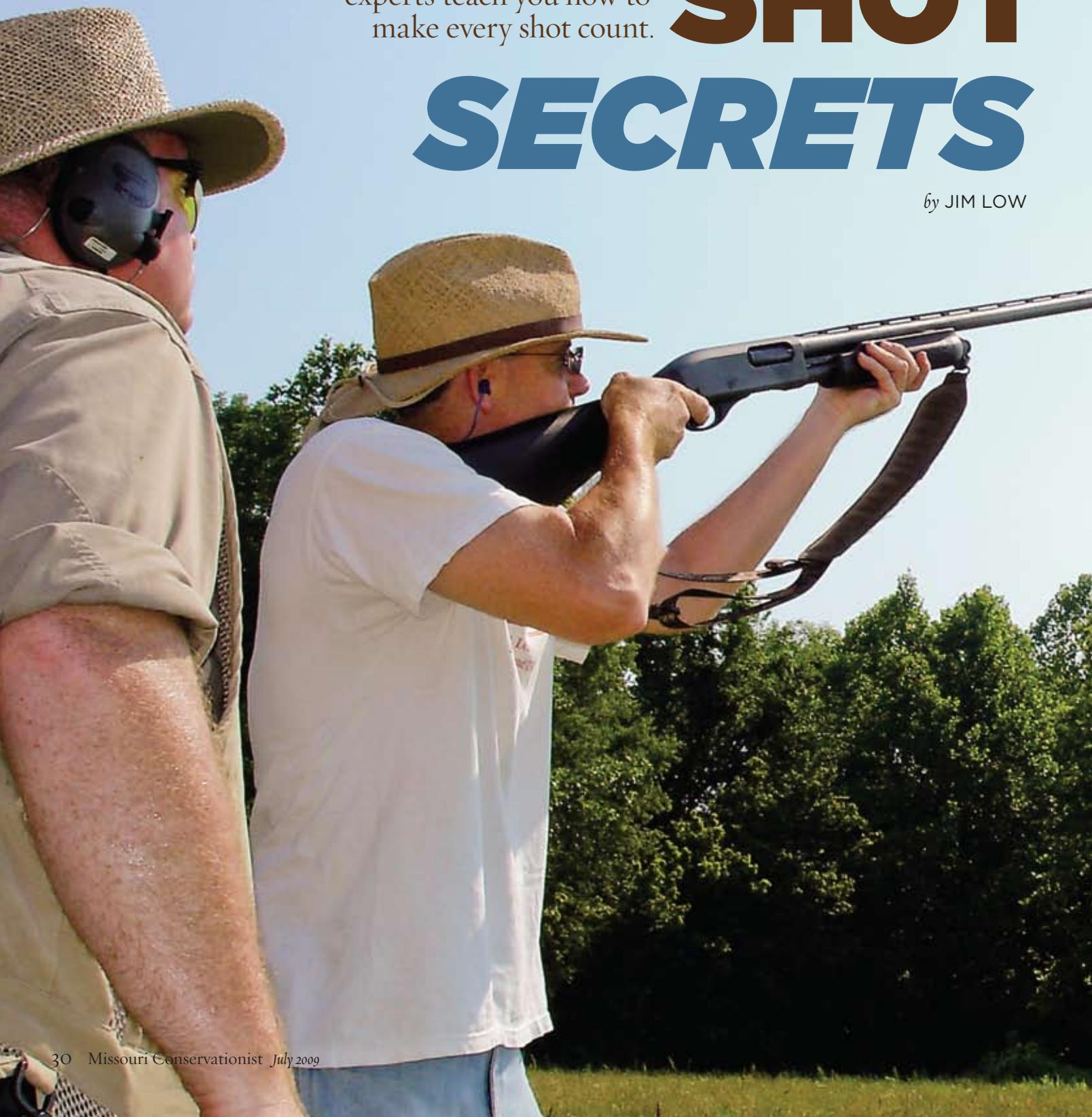
Archery teaches you to slow down, concentrate and fine-tune the coordination between mind and body. These are key elements in NASP and in life.

"Success breeds success," says Commissioner Johnson. "Once kids succeed in archery, they find they can succeed in other parts of their lives." ▲

NONTOXIC SHOT *SECRETS*

Conservation Department
experts teach you how to
make every shot count.

by JIM LOW



Practically every hunter knows that steel and other nontoxic shot performs differently than lead shot. What many do not know is how nontoxic shot is different; how different it is and how to adjust shooting habits to compensate for the differences. Those who attend free shooting clinics around the state will learn these things and become more effective hunters in the process.

MDC offers "Effective Wingshooting, the CONSEP Way" clinics at nine locations statewide from June through October. The clinics — part of the Cooperative North American Shooting Education Program (CONSEP) — are designed to help hunters become more effective, ethical wingshooters.

Each event includes an afternoon or evening classroom session open to everyone. Registration for these events is limited only to the capacity of the hosting facility. A limited number of participants who are in a position to pass their knowledge on to other hunters will take part in one-day hands-on shooting training

sessions following the classroom portion of the clinics. Ammunition and lunch are provided free of charge at these sessions. Separate events with shooting training are offered to hunter education instructors.

Lead is the most common material used in shotgun ammunition. Because lead shot has been found to poison waterfowl and eagles that feed on waterfowl, federal law requires duck and goose hunters to use nontoxic alternatives to lead shot. In 2007, Missouri expanded that prohibition to all hunting on 21 conservation areas.

Areas where only nontoxic shot is allowed and possession of lead shot is prohibited are B. K. Leach Memorial, Black Island, Bob Brown, Columbia Bottom, Cooley Lake, Coon Island, Duck Creek, Eagle Bluffs, Fountain Grove, Four Rivers, Grand Pass, Little Bean Marsh, Little River, Marais Temps Clair, Montrose, Nodaway Valley, Otter Slough, Schell-Osage, Settle's Ford, Ted Shanks and Ten Mile Pond.

For more information, visit [www.Missouri Conservation.org/hunt/gamebird/wingshooting.htm](http://www.MissouriConservation.org/hunt/gamebird/wingshooting.htm). ▲

This year's Missouri CONSEP offerings include:

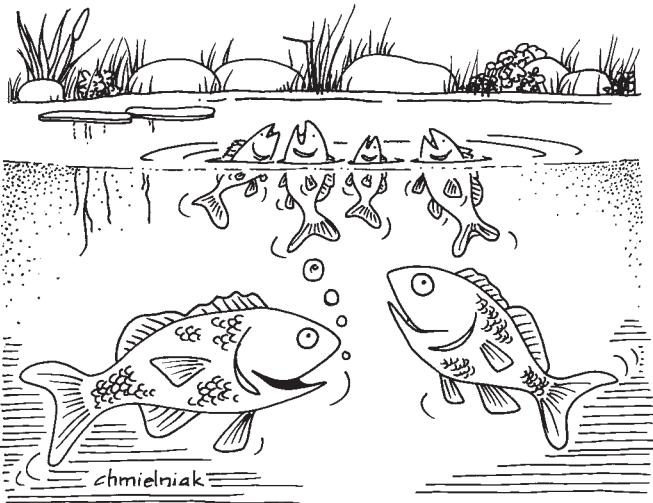
- July 24–26 at the Ozark Regional Office in West Plains. Call 417-256-7161 for registration and additional information.
- Aug. 21–22 at Nodaway Valley Conservation Area (CA) in Holt County. Call 816-271-3100.
- Sept. 11–13 at the Jay Henges Shooting Range at Forest 44 CA in St. Louis County. Call 636-300-1953, ext. 302.
- Sept. 18–20 at the UMC Range, Sedalia. Call 816-655-6250.
- Sept. 25–27 at Runge Conservation Nature Center, Jefferson City. Call 573-884-6861.
- Oct. 2–4 at the Andy Dalton Shooting Range at Bois D'Arc CA in Greene County. Call 417-895-6880.
- Oct. 2–4 at Ted Shanks CA in Pike County. Call 660-785-2420.
- Oct. 9–11 at August A. Busch Memorial CA in St. Charles County. Call 636-300-1953, ext. 302.
- Oct. 16–18 at Duck Creek CA in Bollinger County. Call 573-290-5730.

Hunting and Fishing Calendar

FISHING	OPEN	CLOSE
Black Bass (certain Ozark streams, see the <i>Wildlife Code</i>)	5/23/09	2/28/10
impoundments and other streams year-round		
Bullfrogs and Green Frogs	Sunset	Midnight
	6/30/09	10/31/09
Trout Parks	3/1/09	10/31/09
HUNTING	OPEN	CLOSE
Coyotes	5/11/09	3/31/10
Deer		
Firearms		
Urban	10/9/09	10/12/09
Youth	10/31/09	11/1/09
	1/2/10	1/3/10
November	11/14/09	11/24/09
Antlerless	11/25/09	12/6/09
Muzzleloader	12/19/09	12/29/09
Archery		
	9/15/09	11/13/09
	11/25/09	1/15/10
Doves	9/1/09	11/9/09
Groundhog	5/11/09	12/15/09
Rabbits	10/1/09	2/15/10
Sora and Virginia rails	9/1/09	11/9/09
Squirrels	5/23/09	2/15/10
Turkey		
Firearms		
Fall	10/1/09	10/31/09
Archery		
	9/15/09	11/13/09
	11/25/09	1/15/10
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see <i>www.missouriconserivation.org/7573</i>	
Wilson's (common) snipe	9/1/09	12/16/09
Woodcock	10/15/09	11/28/09

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit www.MissouriConservation.org/8707 or permit vendors.

The Department of Conservation's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800-392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to www.wildlifelicense.com/mo/.



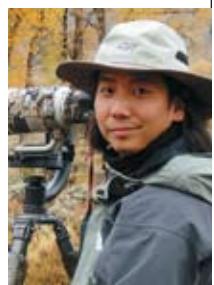
"The kids are trying to see
who can hold their breath the longest."

Contributors



KEVIN LOHRAFF grew up outdoors with a bow, gun or fishing rod in his hands at all times. "There are few things more rewarding than seeing someone get excited about a new outdoor skill you have helped them learn," he says. Kevin works in Jefferson City as the Department's Outdoor Skills Education Coordinator.

NOPPADOL PAOTHONG discovered his passion for wildlife photography in college in 1995. Born in Thailand, he came to the U.S. in 1993 to study graphic arts before switching to journalism. When not traveling and photographing, he enjoys time at home cooking. He, his wife, and their two golden retrievers live in Columbia.



DON'T MOVE FIREWOOD!



To help contain Missouri's emerald ash borer infestation, cut or buy firewood from local sources, and use it as close to its point of origin as possible. You can learn more about how to control the spread of emerald ash borer at www.MissouriConservation.org/10985.

WHAT IS IT?

Bullfrog

On the backcover and right is a bullfrog by Noppadol Paothong. To learn more about bullfrogs, read the article *No Bull!* on Page 5. To learn more about toads and frogs, visit www.MissouriConservation.org/19246. The Web site includes photos, audio recordings of mating calls, distribution maps and brief biological information on more than 20 different species. You can also request a free booklet by writing *Missouri Toads and Frogs*, PO Box 180, Jefferson City, MO 65102, or e-mail pubstaff@mdc.mo.gov.



AGENT NOTES

How Many Poles Can You Fish With?

ONE OF THE more common fishing questions I get is, "How many fishing poles can I use?" While most anglers commonly fish with two or three poles, the *Wildlife Code* states that not more than three unlabeled poles and not more than 33 hooks in the aggregate can be used by any person at one time. If you are using pole and line methods to fish public waters, you could potentially use 33 fishing poles; however, 30 of those fishing poles would need to be



labeled with your name and address. The label can be as simple as a piece of duct tape. On the Mississippi River, not more than two unlabeled poles and not more than 50 hooks can be used by any person at one time. In this situation, one could fish with 50 fishing poles, but 48 of them would need to be properly labeled. Most conservation areas limit the number of poles to three, but read the specific area regulations before you go. You can pick up a copy of *A Summary of Missouri Fishing Regulations* at permit vendors or you can download a PDF at www.MissouriConservation.org/2115.



Bank fishing at night can be a great way to catch a few fish and beat the summer heat. I don't know about you, but watching someone try to manage 50 fishing poles on the banks of the Mississippi would be a sight to see!

Kevin Eulinger is the conservation agent for Lincoln County, which is in the St. Louis Region. If you would like to contact the agent for your county, phone your regional Conservation office listed on Page 3.

WHAT IS IT?

Our photographers have been busy exploring the intricacies of the Missouri outdoors. See if you can guess this month's natural wonder. The answer is revealed on the inside of this back cover.



Subscribe online

www.MissouriConservation.org/15287

Free to Missouri households

